

Claims

What is claimed is:

1. An apparatus for use in a color video projection display system, the apparatus comprising:

5 at least one panel arranged within the system to receive via an input optical path incident light of one or more designated colors generated from a light source, the panel modulating the incident light of at least one of the colors in accordance with a corresponding applied signal, modulated incident light of the one
10 or more colors being directed within the system from the panel via an output optical path so as to generate a viewable display of the system; and

 at least one low-retardance film arranged within one of
(i) the input optical path of the system between an input optical
15 path polarizer and the at least one panel and (ii) the output optical path of the system between the at least one panel and an output optical path polarizer, so as to increase a contrast ratio of the viewable display.

20 2. The apparatus of claim 1 wherein the color video projection display system comprises a reflective system having at least one reflective panel.

25 3. The apparatus of claim 1 wherein the color video projection display system comprises a transmissive system having at least one transmissive panel.

4. The apparatus of claim 1 wherein the color video projection display system comprises an on-axis system.

5. The apparatus of claim 1 wherein the color video
5 projection display system comprises an off-axis system.

6. The apparatus of claim 1 wherein the color video projection display system comprises a single-panel projection display system having a single reflective panel and a single
10 corresponding low-retardance film associated therewith.

7. The apparatus of claim 1 wherein the color video projection display system comprises a single-panel projection display system having a single transmissive panel and a single low-
15 retardance film associated therewith.

8. The apparatus of claim 1 wherein the color video projection display system comprises a three-panel projection display system having first, second and third panels, each
20 associated with respective red, green and blue portions of the incident light.

9. The apparatus of claim 8 wherein a single low-retardance film is associated with all three of the panels and is arranged in
25 an input optical path of the system at a point prior to separation of the incident light into the one or more designated colors for application to the panels.

10. The apparatus of claim 8 wherein each of the three panels has associated therewith a corresponding single low-retardance film arranged within one of (i) the input optical path of the system between an input optical path polarizer and the panel and (ii) the
5 output optical path of the system between the panel and an output optical path polarizer.

11. The apparatus of claim 1 wherein the at least one panel comprises a reflective panel and a single low-retardance film
10 associated with the reflective panel is arranged within an input optical path of the system between the input optical path polarizer and the reflective panel.

12. The apparatus of claim 1 wherein the at least one panel
15 comprises a reflective panel and a single low-retardance film associated with the reflective panel is arranged within an output optical path of the system between the reflective panel and the output optical path polarizer.

20 13. The apparatus of claim 1 wherein the single low-retardance film comprises a diacetate film.

14. The apparatus of claim 1 wherein the single low-retardance film comprises a film having a retardance of less than
25 about 30 nanometers.

15. The apparatus of claim 14 wherein the single low-retardance film comprises a film having a retardance of approximately 25 nanometers.

5 16. The apparatus of claim 1 wherein the panel comprises a liquid crystal display (LCD) panel.

17. The apparatus of claim 1 wherein the panel comprises a liquid crystal on silicon (LCoS) display panel.

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18. A color video projection display system comprising:

a light source from which incident light of one or more designated colors is generated;

15 at least one panel arranged within the system to receive via an input optical path the incident light of one or more designated colors, the panel modulating the incident light of at least one of the colors in accordance with a corresponding applied signal;

20 a projection element arranged within the system so as to receive modulated incident light of the one or more colors directed within the system from the panel via an output optical path, the projection element generating a viewable display of the system; and

25 at least one low-retardance film arranged within one of (i) the input optical path of the system between an input optical path polarizer and the at least one panel and (ii) the output optical path of the system between the at least one panel and an

output optical path polarizer, so as to increase a contrast ratio of the viewable display.

19. A method for use in a color video projection display
5 system, wherein the system includes at least one panel arranged within the system to receive via an input optical path incident light of one or more designated colors, the panel modulating the incident light of at least one of the colors in accordance with a corresponding applied signal, modulated incident light of the one
10 or more colors being directed within the system from the panel via an output optical path so as to generate a viewable display of the system, the method comprising the step of:

arranging at least one low-retardance film within one of
(i) the input optical path of the system between an input optical
15 path polarizer and the at least one panel and (ii) the output optical path of the system between the at least one panel and an output optical path polarizer, so as to increase a contrast ratio of the viewable display.